Geo-targeted All Hazard Alerts Coming to Millions of Mobile Devices

NOAA/National Weather Service

Silver Spring, MD

Commercial Carriers and Government Respond to the Need for Mobile Alerts

WARN Act of 2006 authorized DHS and FCC to begin activities toward development of a Commercial Mobile Alert Service (CMAS)

In 2007-08, joint Commercial and Government (all levels) committee developed recommendations for mobile alerts
- **Cell tower broadcast (not SMS text), so no network congestion**
- **90 character maximum**
- **Opt-out**

Rollout
- **Called Wireless Emergency Alerts (WEA)**
- **Carrier rollout started April 2012 (carrier dependent)**
- **NWS scheduled to start alert push late May 2012**

Wireless Emergency Alerts (WEA)

Alert Categories

- **Presidential**
- **Imminent threat to life and property (e.g., severe weather, HazMat, earthquake)**
- **AMBER Alert/child abduction**

Alert Message Content (90 characters)

- **What is happening (e.g., Tornado)**
- **Area affected ("in this area")**
- **Time (e.g., til 4:15PM EST)**
- **Recommended action (e.g. take shelter)**
- **Sending agency (e.g., NWS)**

Quick Facts about WEA

- **WEA is a free service and opt-out**

- **Cell tower <u>broadcast</u> to cell phones where tower broadcasts to threat area.**
  - *Not a privacy issue. Service does not track you. WEA is merely a radio broadcast.*
  - *Service is not subscription based. You only receive alert if you are in the threat area .*

- **Purpose is notification, recipient must seek additional info**

- **Acronym soup – CMAS, PLAN, and WEA are all names for the same service**

- **Major carriers are committed to producing WEA capable phones**

- **If you travel into an alert area after the alert was originally sent, you should still receive it**

- **Each WEA is only displayed once, so you don't receive duplicates**

- **WEA has a distinct vibration cadence and audio tone**

- **Alerts do not interrupt when you are in a voice or data session on the device**

NWS Alerts Get to WEA Through FEMA Integrated Public Alert and Warning System (IPAWS)

Television

Radio

Commercial sector

National Weather Service and other authorities

Alerts in Common Alerting Protocol (CAP) Format

NWS

FEMA IPAWS

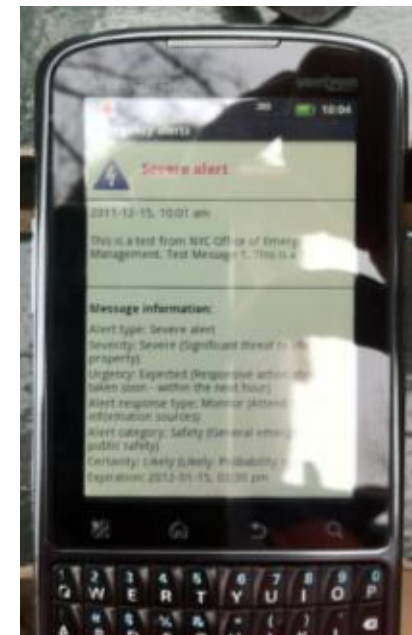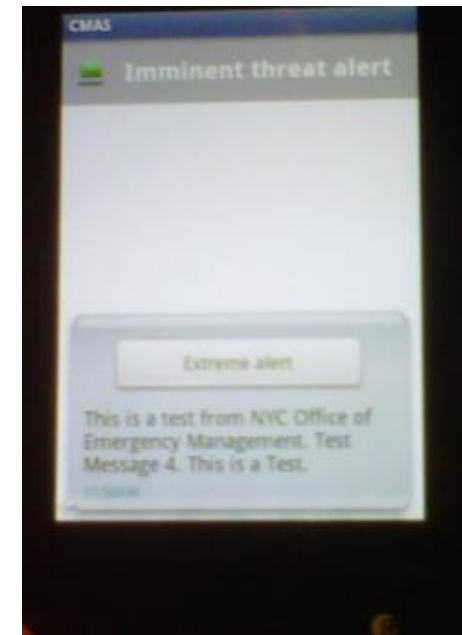**Cell Phone**
(WEA via FEMA IPAWS)

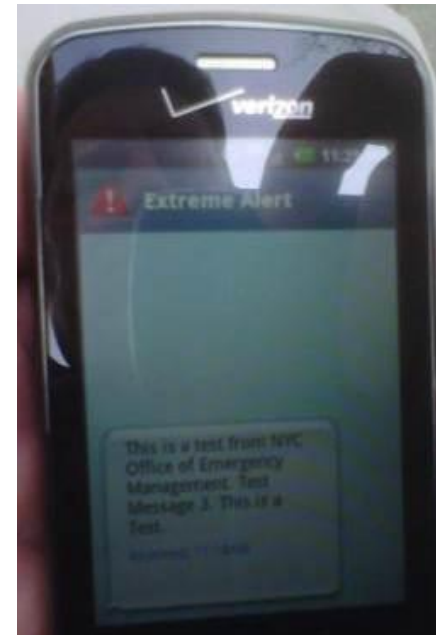**Computer**

Home Phone

Other alerting systems, consumer electronics, and decision support tools

Public Signage

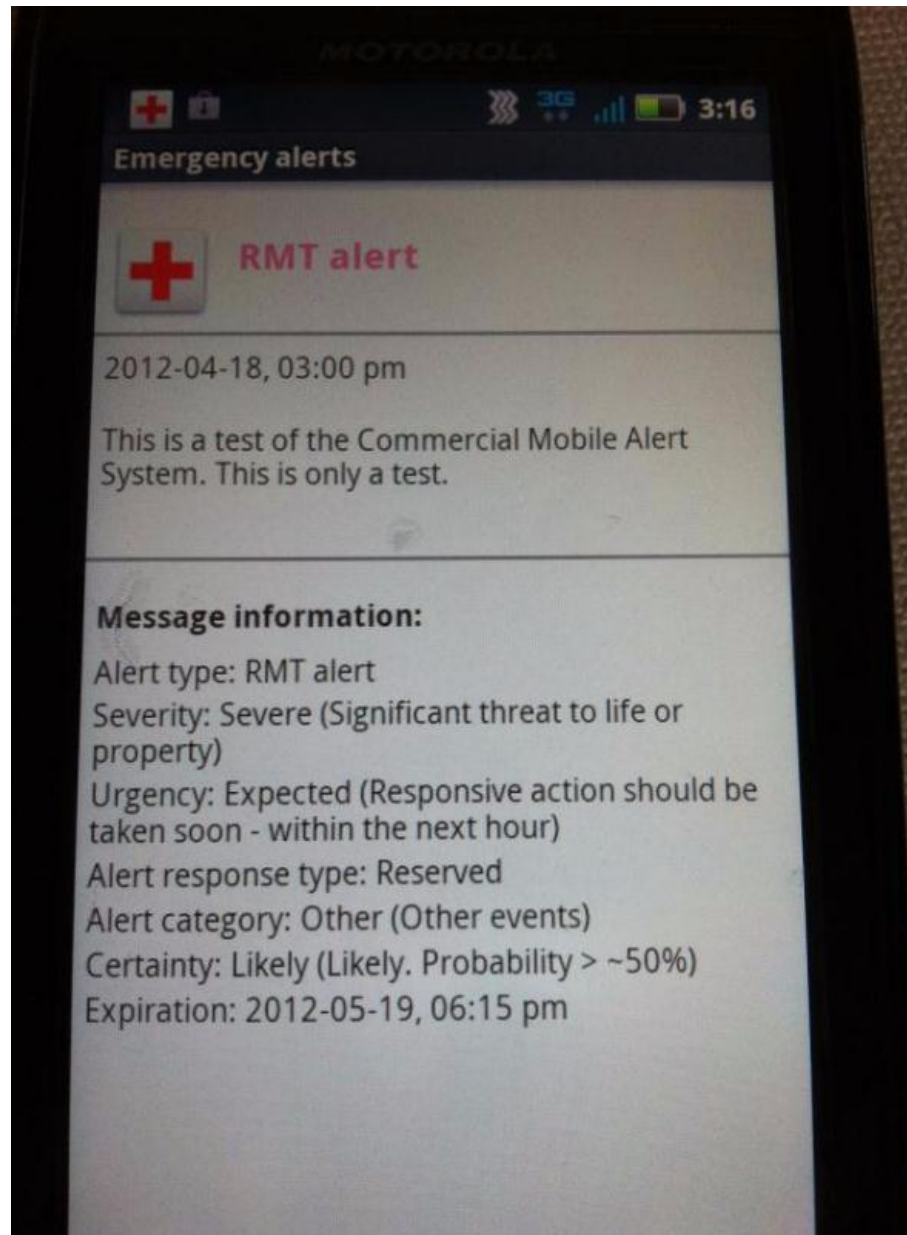# Examples of alert presentation on phones observed in NYC testing 15 Dec 2011:

All messages constructed using free form 90 character CMAM text field

Emergency Alert

This is a test from NYC Office of Emergency Management. Test Message 6A. This is a Test.

Type: Severe Alert

Extreme Alert

This is a test from NYC Office of Emergency Management. Test Message 3. This is a Test.

CMAS

Imminent threat alert

Extreme alert

This is a test from NYC Office of Emergency Management. Test Message 4. This is a Test.

Severe alert

2011-12-15, 10:01 am

This is a test from NYC Office of Emergency Management. Test Message 1. This is a
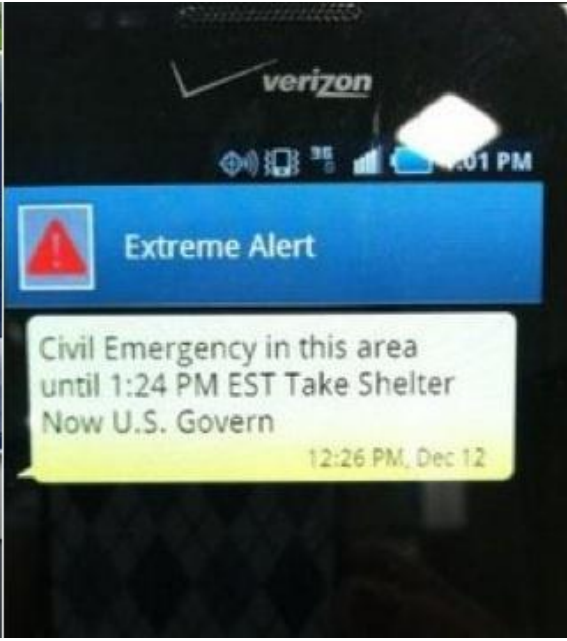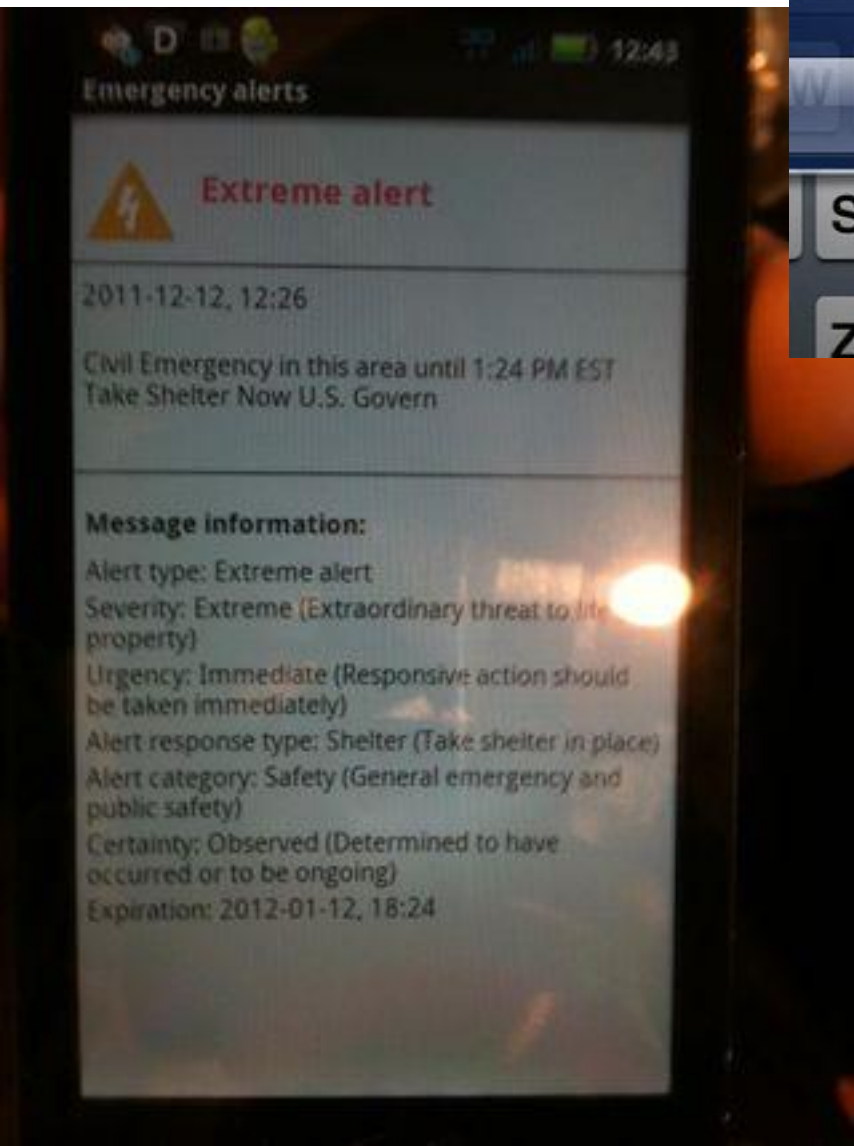
Message information:
Alert type: Severe alert

RMT 18Apr2012, VzW phone in WDC

This message was generated from CAP message that included free form CMAN Text field

Red Bank NJ Verizon Wireless accidental test message release, 12Dec2011

Messages constructed from CAP fields

Nuggets from April 20 Webinar

- Rollout - Sprint fully deployed nationwide. Other carriers rolled out to lesser extent, but rolling out gradually.

- Opt-out for Severe vs. Extreme alerts - Sprint and Verizon allow users to opt-out of severe or extreme imminent threat alerts rather than forcing   opt-out of "all or none".   Unclear if users would understand difference.

- County vs. Polygon level alerting - Sprint and AT&T working to do sub-county level warning, but even if NWS polygons used, there are numerous cell network complexities that could result in under/over-warning. Other carriers alerting at the county level as required in the Code of Federal Regulations for CMAS

- iPhones will be CMAS capable with a future software update

CMAS Messages Originated by NWS

When new alert or correction issued or time/area extended

Warning Type	CMAS Message
Tsunami Warning	Tsunami Warning in this area. Avoid coastal areas. Check local media. –NWS
Tornado Warning	Tornado Warning in this area til hh:mm tzT. Take shelter now. –NWS
Extreme Wind Warning	Extreme Wind Warning this area til hh:mm tzT ddd. Take shelter. –NWS
Flash Flood Warning	Flash Flood Warning this area til hh:mm tzT. Avoid flooded areas. Check local media. -NWS
Hurricane Warning	Hurricane Warning this area til hh:mm tzT ddd. Check local media and authorities. -NWS
Typhoon Warning	Typhoon Warning this area til hh:mm tzT ddd. Check local media and authorities. -NWS
Blizzard Warning	Blizzard Warning this area til hh:mm tzT ddd. Prepare. Avoid Travel. Check media. -NWS
Ice Storm Warning	Ice Storm Warning this area til hh:mm tzT ddd. Prepare. Avoid Travel. Check media. -NWS
Lake Effect Snow Warning	Lake Effect Snow Warning this area til hh:mm tzT ddd. Avoid travel. Check media. –NWS
Dust Storm Warning	Dust Storm Warning in this area til hh:mm tzT ddd. Avoid travel. Check local media. -NWS

Legend
tzT = timezone
ddd= three letter abbreviation for day of the week

CTIA
ctia.org/wea

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The Wireless Association®

CTIA is the International Association for the Wireless Telecommunications Industry, Dedicated to Expanding the Wireless Frontier

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Wireless Emergency Alerts on Your Mobile Device

CTIA-The Wireless Association® and the wireless industry joined the Federal Communications Commission (FCC) and Federal Emergency Management Agency (FEMA) to offer Americans a robust and reliable wireless emergency alert system.

Wireless Emergency Alerts (WEA), also known as Commercial Mobile Alert System (CMAS) or Personal Localized Alerting Network (PLAN), is a national emergency alert system to send concise, text-like messages to users' WEA-capable mobile devices starting April 2012. Wireless providers representing nearly 97 percent of subscribers are participating in distributing wireless emergency alerts.

*Mobile users will **not** be charged for receiving these text-like alerts and are automatically enrolled to receive them.*

There are three different kinds of alerts:

- Presidential Alerts — Alerts issued by the President or a designee;
- Imminent Threat Alerts — Alerts that include severe man-made or natural disasters, such as hurricanes, earthquakes, tornadoes, etc., where an imminent threat to life or property exists; and
- AMBER Alerts — Alerts that meet the U.S. Department of Justice's criteria to help law enforcement search for and locate an abducted child.

While these alerts will appear on a person's mobile device similar to a text message, Wireless Emergency Alerts are not text messages. Instead, Wireless Emergency Alerts use a different kind of technology to ensure they are delivered immediately and are not subjected to potential congestion (or delays) on wireless networks.

In addition, Wireless Emergency Alerts are a point-to-multipoint system, which means alert messages will be sent to those within a targeted area, unlike text messages which are not location aware. For example, if a person with a WEA-capable device from Washington, D.C. happened to be in southern California when an earthquake occurred in that area, they would receive an "Imminent Threat Alert" on their device.

There are a number of WEA-capable devices available today, and many of the new phones that are sold from participating carriers will be able to transmit these alerts. If your device has the CTIA Wireless Emergency Alerts logo, then it is WEA-capable. To receive these alerts, you might need to only upgrade your device's software, rather than purchase a new one. To confirm Wireless Emergency Alerts are available in your area and your device is capable of receiving the alerts, please check with your carrier.

Wireless Emergency Alerts FAQ

- FAQ for Consumers
- FAQ on Program

Provider-specific Wireless Emergency Alert Information

WIRELESS EMERGENCY ALERTS CAPABLE™ (Sample)

AT&T
Wireless Emergency Alerts Information

Cellcom:
WEA Main Page

Cricket:
CMAS Press Release

Sprint Nextel Corporation:
Wireless Emergency Alerts Information

T-Mobile USA:
Wireless Emergency Alerts Information

U.S. Cellular:
Wireless Emergency Alerts | U.S. Cellular

Verizon Wireless:
Wireless Emergency Alerts Information

For more information on Wireless Emergency Alerts, please visit:

- FCC Personal Localized Alerting Network (PLAN) for Consumers
- FCC Public Safety and Homeland Security Bureau CMAS Commercial Mobile Telephone Alerts
- FEMA: Commercial Mobile Alert System (CMAS)

CAP Message Format Encourages Technology Innovation that Improves Decision Making and Public Response

XML-based industry standard = low cost of entry for commercial developers

```
<event>Flash Flood Warning</event>
<urgency>Immediate</urgency>
<severity>Severe</severity>
<certainty>Likely</certainty>
<effective>2010-06-03T14:00:00-05:00</effec...          7:00:00-05:00</expires>
<senderName>NWS Memphis (Western Ten...      ...kansas and Northern Mississippi)</senderName>
<headline>Flash Flood Warning issued June 03 at 2:00PM CDT valid until June 03 at 5:00PM CDT by NWS Memphis</headline>
<description>DOPPLER RADAR ESTIMATES 1 TO 3 INCHES OF RAINFALL HAS OCCURRED OVER THE PAST HOUR
<instruction>MO...              ...CUR IN AUTOMOBILES. NEVER DRIVE YOUR VEHICLE INTO AREAS WHERE ...            ...S THE ROADWAY…TURN AROUND...DONT DROWN</instruction>
<polygon>36.20,-88.9...  ...6.18,-88.91 36.05,-88.84 35.99,-89.17 35.99,-89.19 35.98,-89.21 35.94,-89.30 36.17,-89.31 36.21,-89.04 36.20,-88.96 36.22,-88.95 36.20,-88.93</polygon>
```

Alert information at its most granular levels

GIS Friendly

Becoming an Alert Originator
http://www.fema.gov/emergency/ipaws

Takeaways

- **WEA being provided on best effort basis - dependencies on alert origination and cell networks**

- **WEA is intended to act as a bell ringer, not a replacement for other warning systems**

- **WEA is part of the overall larger nationwide warning network, so should still be monitoring TV/radio, NWR, community warning systems, EAS, mobile/desktop apps, etc.**

- **Monitor for announcement from NWS regarding NWS CAP push to FEMA IPAWS (promised wireless carriers two week notice)**